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Feb 6, 2001

DERWENT-ACC-NO: 2001-158725  
DERWENT-WEEK: 200116  
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TITLE: Contactless treatment apparatus for use in e.g. single semiconductor wafer treatment has upper and lower plates enclosing a wafer between the plates and having passages to supply gas to opposite planar sides of the wafer

INVENTOR: GRANNEMAN, E H A; HUUSSEN, F

PATENT-ASSIGNEE: ASM INT NV (ASMIN)

PRIORITY-DATA: 1999US-0227564 (January 8, 1999), 1997WO-NL00398 (July 8, 1997)

## PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
US 6183565 B1	February 6, 2001		008	C23C016/00

## APPLICATION-DATA:

PUB-NO	APPL-DATE	APPL-NO	DESCRIPTOR
US 6183565B1	July 8, 1997	1997WO-NL00398	CIP of
US 6183565B1	January 8, 1999	1999US-0227564	

INT-CL (IPC): C23 C 16/00

RELATED-ACC-NO: 1998-101303

ABSTRACTED-PUB-NO: US 6183565B  
BASIC-ABSTRACT:

NOVELTY - An apparatus for contactless treatment of a semiconductor wafer (3) has upper and lower plates (6) enclosing a wafer between the plates. The plates extend completely over opposite surfaces and beyond the periphery of the wafer, and have passages (10) to supply gas across the plates to position and support the wafer without contact by the plates or other mechanical support.

USE - Used in single wafer treatment or for treating large numbers of wafers one after the other or parallel to one another.

ADVANTAGE - The wafer is heated to a high temperature in the shortest time possible. The arrangement prevents the wafer from being subjected to stresses generated by local temperature differences and prevents distortion as far as possible.

DESCRIPTION OF DRAWING(S) - The figure shows part of the apparatus after introduction of the semiconductor wafer.

Semiconductor wafer 3

Plate 6

Passages 10

w d l

ABSTRACTED-PUB-NO: US 6183565B  
EQUIVALENT-ABSTRACTS:

CHOSEN-DRAWING: Dwg.2/3

DERWENT-CLASS: L03 U11  
CPI-CODES: L04-D09; L04-D10;  
EPI-CODES: U11-F02A2;

## UNITED STATES OF AMERICA (US)

Patent (No,Kind,Date): US 6183565 BA 20010206

METHOD AND APPARATUS FOR SUPPORTING A SEMICONDUCTOR WAFER DURING PROCESSING (English)

Patent Assignee: ASM INT (US)

Author (Inventor): GRANNEMAN ERNST HENDRIK AUGUST (NL); HUUSSEN FRANK (NL)

Priority (No,Kind,Date): WO 97NL398 A 19970708

Applic (No,Kind,Date): US 227564 A 19990108

National Class: \* 118725000; 118728000; 118724000

IPC: \* C23C-016/00

Derwent WPI Acc No: \* G 98-101303

Language of Document: English

Patent (No,Kind,Date): US 6461439 BA 20021008

APPARATUS FOR SUPPORTING A SEMICONDUCTOR WAFER DURING PROCESSING (English)

Patent Assignee: ASM INT (US)

Author (Inventor): GRANNEMAN ERNST HENDRIK AUGUST (NL); HUUSSEN FRANK (NL)

Priority (No,Kind,Date): US 717485 A 20001120; NL 103538 A 19960708

; WO 97NL398 W 19970708; US 227564 A1 19990108

Applic (No,Kind,Date): US 717485 A 20001120

Addnl Info: 6183565 Patented

National Class: \* 118724000; 118725000; 118728000

IPC: \* C23C-016/00

Derwent WPI Acc No: \* G 98-101303

Language of Document: English

WORLD INTELLECTUAL PROPERTY ORGANIZATION, PCT (WO)

Patent (No,Kind,Date): WO 9801890 A1 19980115

METHOD AND APPARATUS FOR CONTACTLESS TREATMENT OF A SEMICONDUCTOR SUBSTRATE IN WAFER FORM (English)

Patent Assignee: ADVANCED SEMICONDUCTOR MAT (NL); GRANNEMAN ERNST HENDRIK AUGUST (NL); HUUSSEN FRANK (NL)

Author (Inventor): GRANNEMAN ERNST HENDRIK AUGUST (NL); HUUSSEN FRANK (NL)

Priority (No,Kind,Date): NL 103538 A 19960708

Applic (No,Kind,Date): WO 97NL398 A 19970708

Designated States: (National) AL; AM; AT; AU; AZ; BA; BB; BG; BR; BY; CA; CH; CN; CU; CZ; DE; DK; EE; ES; FI; GB; GE; GH; HU; IL; IS; JP; KE; KG; KP; KR; KZ; LC; LK; LR; LS; LT; LU; LV; MD; MG; MK; MN; MW; MX; NO; NZ; PL; PT; RO; RU; SD; SE; SG; SI; SK; SL; TJ; TM; TR; TT; UA; UG; US; UZ; VN; YU; ZW; AM; AZ; BY; KG; KZ; MD; RU; TJ; TM (Regional) GH; KE; LS; MW; SD; SZ; UG; ZW; AT; BE; CH; DE; DK; ES; FI; FR; GB; GR; IE; IT; LU; MC; NL

Filing Details: WO 101000 With international search report; In English translation

IPC: \* H01L-021/00

Derwent WPI Acc No: ; G 98-101303

Language of Document: Chinese

Jan 15 1998

1/5/1

14192080

Basic Patent (No,Kind,Date): NL 1003538 C2 19980112

## PATENT FAMILY:

## AUSTRALIA (AU)

Patent (No,Kind,Date): AU 9733617 A1 19980202

METHOD AND APPARATUS FOR CONTACTLESS TREATMENT OF A SEMICONDUCTOR  
SUBSTRATE IN WAFER FORM (English)

Patent Assignee: ADVANCED SEMICONDUCTOR MAT

Author (Inventor): GRANNEMAN ERNST HENDRIK AUGUST; HUUSSEN FRANK

Priority (No,Kind,Date): NL 103538 A 19960708; WO 97NL398 W  
19970708

Applic (No,Kind,Date): AU 9733617 A 19970708

IPC: \* H01L-021/00

Derwent WPI Acc No: \* G 98-101303

Language of Document: English

## → EUROPEAN PATENT OFFICE (EP)

Patent (No,Kind,Date): EP 910868 A1 19990428

METHOD AND APPARATUS FOR CONTACTLESS TREATMENT OF A SEMICONDUCTOR  
SUBSTRATE IN WAFER FORM (English; French; German)

Patent Assignee: ADVANCED SEMICONDUCTOR MAT (NL)

Author (Inventor): GRANNEMAN ERNST HENDRIK AUGUST (NL); HUUSSEN FRANK  
(NL)Priority (No,Kind,Date): WO 97NL398 W 19970708; NL 103538 A  
19960708

Applic (No,Kind,Date): EP 97929595 A 19970708

Designated States: (National) DE; FR; GB

IPC: \* H01L-021/00

Derwent WPI Acc No: \* G 98-101303

→ Language of Document: English

## JAPAN (JP)

Patent (No,Kind,Date): JP 11514154 T2 19991130

Priority (No,Kind,Date): WO 97NL398 W 19970708; NL 103538 A  
19960708

Applic (No,Kind,Date): JP 97505093 A 19970708

IPC: \* H01L-021/68

Derwent WPI Acc No: \* G 98-101303

Language of Document: Japanese

## KOREA, REPUBLIC (KR)

Patent (No,Kind,Date): KR 2000022406 A 20000425

METHOD AND APPARATUS FOR CONTACTLESS TREATMENT OF A SEMICONDUCTOR  
SUBSTRATE IN WAFER FORM (English)

Patent Assignee: ADVANCED SEMICONDUCTOR MAT

Author (Inventor): GRANNEMAN ERNST HENDRIK AUGUST (KR); HUUSSEN FRANK  
(KR)

Priority (No,Kind,Date): NL 103538 A 19960708

Applic (No,Kind,Date): KR 98710838 T 19981230

IPC: \* H01L-021/02

Derwent WPI Acc No: \* G 98-101303

Language of Document: Korean

## NETHERLANDS (NL)

Patent (No,Kind,Date): NL 1003538 C2 19980112

WERKWIJZE EN INRICHTING VOOR HET CONTACTLOOS BEHANDELEN VAN EEN  
SCHIJFVORMIG HALFGELEIDERSUBSTRAAT. (Dutch)

Patent Assignee: ADVANCED SEMICONDUCTOR MAT (NL)

Author (Inventor): GRANNEMAN ERNST HENDRIK AUGUST (NL); HUUSSEN FRANK  
(NL)

Priority (No,Kind,Date): NL 103538 A 19960708

Applic (No,Kind,Date): NL 103538 A 19960708

IPC: \* H01L-021/68; H01L-021/00

Language of Document: Dutch